



Arizona Department of Water Resources  
**GROUNDWATER USERS ADVISORY COUNCIL**  
Tucson Active Management Area

JOHN MAWHINNEY  
Chair

DAN M. OFFRET  
Vice-Chair

LARRY KEMPTON

VAL LITTLE

DEE O'NEILL

**Minutes**  
**January 8, 2009**

**Members Present:** John Mawhinney, Chair  
Dan M. Offret, Vice-Chair  
Val Little  
Dee O'Neill

**Tucson Staff Present:** Jeff Tannler  
Mary Bauer  
Laura Grignano  
Diane Kusel  
Dawne Wilson

**Phoenix Staff Present:** Brian Conway

**Others Present:** Michael Block, Metro Water Dist.  
Rob Carruth, USGS  
Kathleen Chavez, Pima County  
Hector Conde  
Brad DeSpain, Town of Marana  
Nancy Freeman, Groundwater Awareness League  
Matthew Garcia, AZ Water Institute  
Eve Halper, Bureau of Reclamation  
Julia McKenna, Montgomery & Associates  
Pete Schlegel, PMA Group  
Bob Simpson  
Linda Smith, Tucson Water  
Sidney Smith, CMID  
Vince Vasquez, Diamond Ventures

- 1. Call to Order**  
Chair John Mawhinney called the meeting to order at 9:35 a.m. Introductions were made.
- 2. Approval of Minutes**  
Dan Offret made a motion to approve the minutes of November 3, 2008. Dee O'Neill seconded the motion. The minutes were unanimously approved.
- 3. Subsidence Monitoring Activities**  
Brian Conway from ADWR's Hydrology Division was invited to give an update on the satellite based land subsidence monitoring program. The program, made possible by a NASA Earth Sciences Grant,

started in 2002. ADWR, along with Microsoft Vexcel Corporation and the University of Texas, worked cooperatively in building ADWR's Interferometric Synthetic Aperture Radar (InSAR).

In 2005, ADWR began collecting and processing monthly data from the European Space Agency and Canadian Space Agency SAR satellites, producing time-series interferograms for the Phoenix and Tucson metropolitan areas.

ADWR monitors land subsidence using InSAR. Each InSAR frame covers a 100 kilometer square area. InSAR processing identifies active land movement to determine the amount of subsidence that occurred during a particular time period. It allows ADWR to track subsidence related to pumping regimes, weather related recharge events, and artificial recharge events. Through this program ADWR has identified and now monitors more than 16 active land subsidence features around the state.

Numerous state, county and local government entities utilize the data as an important resource in their own monitoring efforts. As a result, these groups have entered into agreements with ADWR, providing annual contributions to the program. In the Tucson/Pima County area, the two contributors are Metro Water District and Community Water Company. Each satellite frame costs a minimum of \$10,000 a year; hence, ADWR is looking for additional funding sources for the Pima County InSAR frame.

#### **4. Aquifer Storage Monitoring Activities**

Rob Carruth from the Tucson office of the United States Geological Survey (USGS) was invited to give an update on the aquifer storage monitoring activities in the Tucson region. This project is made possible with the cooperation of ADWR, Tucson Water, Pima County, Town of Oro Valley and Metro Water District.

In the past land surface elevation change was primarily monitored using Global Positioning Surveys (GPS), which is very labor intensive when measuring big areas of land. USGS has been using ADWR's interferograms to correlate with GPS readings. Having the interferograms available adds much value to the GPS method to monitoring land surface change.

Gravity and land subsidence were measured annually between 1998-2002 at a series of wells and benchmarks. Significant subsidence of more than one inch occurred only in the central part of Tucson during the monitoring period, and above average recharge during 1998 resulted in change in groundwater storage and water levels. Recharge during the monitoring period was greater than groundwater withdrawals, which resulted in maintaining a positive water balance.

Analysis indicates that most of the recharge during the monitoring period in the Tucson basin occurred as a result of above-average precipitation and streamflow infiltration during the winter of 1998. Natural recharge varied from 380,000 acre-feet during the initial period to an average of 70,000 acre-feet/year.

Recharge in Avra Valley was dominated by artificial recharge of infiltrated streamflow and incidental recharge of effluent. Natural recharge averaged about 30,000 acre-feet/year, assuming that under-sampling of storage change near the artificial recharge facilities didn't significantly bias results for the entire network.

The observed storage change in the monitored areas compares closely with that of the groundwater flow model by Mason and Bota, 2006, with the exception of the 1998 period when above-average recharge and increased groundwater storage occurred. Groundwater flow models of the region may be improved by including periodic climate-related variations in recharge.

## 5. GUAC Chair Updates

- a. Open meeting law – At the Central Arizona Water Conservation District (CAWCD) Board meeting that was held in Tucson at the end of December 2008, inadvertently a quorum of the GUAC was in attendance. Under the open meeting law rules and regulations, this is not permissible unless it is noticed through ADWR that there may be a quorum of the GUAC members but no official business will be conducted.

b. Update from IPAG

The IPAG has been meeting to discuss Municipal and Industrial (M&I) firming. M&I firming is when the Arizona Water Banking Authority (AWBA) stores water in the Tucson AMA for use in times when there are shortages on the Colorado River and/or if the CAP canal is down for maintenance or otherwise.

There has not been a great deal of progress on firming due to either water not being available or limited capacity at facilities. IPAG is looking at the possibility of storing at Groundwater Savings Facilities (GSF); M&I firming CAP water is currently being stored only at Underground Savings Facilities (USF). One of the problems is the cost to store CAP water at GSFs; it is cheaper to pump groundwater. IPAG is working on proposing differential pricing mechanisms with the goal of making the AWBA costs for CAP water more competitive. The next meeting of the IPAG is scheduled for February 17, 2009.

- c. Update on AWBA Legislation– At the previous GUAC meeting there was discussion on supporting the AWBA's position to improve its priority order in receiving CAP water. The AWBA is last in line to receive excess CAP water.

The AWBA is required by statute to store excess CAP water for several purposes, including to secure water for Indian settlements and to protect M&I water users during times of drought. In addition, the AWBA has an obligation to store 1.2 MAF of excess CAP water for Nevada. Presently, the AWBA cannot meet its obligations because excess CAP water orders by other entities exceed the available supply.

There is currently legislation drafted that ultimately states that if the CAWCD were to create a pool of water for the AWBA, it could use the water to fulfill its obligations. The GUAC recommended the legislation be supported through contact with local elected officials and any others that would be supportive.

d. Status Report on GUAC Terms

Larry Kempton of FICO and Val Little of Water CASA were recently appointed to the Tucson GUAC. The current terms of the Tucson GUAC are as follows:

	<u>Term Expires</u>
Dee O'Neill	1/19/2010
John Mawhinney	1/16/2012
Dan Offret	1/21/2013
Larry Kempton	1/20/2014
Val Little	1/20/2014

## 6. Area Director Report

### a. Assessment, Fourth Management Plan Updates

ADWR is working on water use projection numbers. The current completion due date is March 2009.

### b. Municipal GPCD Notices

19 letters have been sent to large municipal water providers informing them of their utilities' Gallons Per Capita Per Day (GPCD) and Lost & Unaccounted-for (L&U) compliance status for the years 2000-2006. The GPCD program has been the main conservation program for large providers through the First and Second Management Plans, and till recently in the Third Management Plan. Beginning in 2010, most large providers will be regulated under the Modified Non-Per Capita Conservation Program (MNPCCP), pursuant to a modification of the Third Management Plan.

Of the 19 large providers, 13 had issues with their L&U water limit and 11 had issues with exceeding GPCD targets. Meetings are being conducted to address these issues, and 2007 numbers are currently being worked through.

### c. Modified Non-Per Capita Conservation Program (MNPCCP)

The MNPCCP is an alternative program to the GPCD program. Entering the MNPCCP will be mandatory for those large providers that are not designated as having an assured water supply. Those large providers that are designated as having an assured water supply will have the option of remaining in the current GPCD program or may choose to enter into the MNPCCP. The MNPCCP will go into effect January, 2010. There will be a workshop held on January 20, 2009 in Phoenix that will focus on this new program.

### d. Use of CAP Water in Green Valley Area – Updates

At the CAWCD Board meeting recently held in Tucson, there were proposals presented by Farmers Investment Company (FICO) and Community Water Company of Green Valley (CWCGV) for extending the CAP to the Green Valley area. FICO has a GSF that is permitted for 22,000 acre-feet; the problem is there is no infrastructure currently in place to receive CAP water. FICO's proposal would entail building a 36" pipeline from the Pima Mine Road terminus in order to get CAP water to FICO's GSF. This proposal could possibly deliver water to CWCGV and Green Valley Domestic Water Improvement District (GVDWID) as well; both water companies have CAP allocations. An alternate proposal was submitted to the Bureau of Reclamation (BOR) by CWCGV to extend the pipeline down to a potential recharge site in CWCGV's service area with the possibility of delivering water to GVDWID also. One contentious piece of CWCGV's proposal is that the funding would be paid for by Rosemont Copper Company.

One of the questions that has come up is why would the BOR consider CWCGV's proposals but not FICO's? The difference is that CWCGV is a subcontractor and has a CAP allocation, and historically the BOR has agreed to evaluate and assist with any plans to extend the pipeline so that CAP allocations can be used; whereas, FICO doesn't have a CAP allocation.

The BOR has agreed to consider FICO's proposal in the Environmental Assessment (EA) they are conducting for CWCGV's proposal. ADWR has agreed to be a cooperating agency in reviewing the EA.

e. Water Adequacy, Senate Bill 1575

Senate Bill 1575 was passed in 2007. Provisions of this bill allow cities, towns and counties to adopt an ordinance that would require new subdivisions outside of AMAs to get a determination of water adequacy from ADWR before the final plat. This will change ADWR's Assured and Adequate Supply Rules. The public comment period is through January 21, 2009 and a subsequent public meeting will be held in ADWR's Phoenix office.

f. Agency Budget Updates

There have been rumors of possible layoffs and/or furloughs. Nothing is concrete at this time. ADWR directorate staff will be meeting to discuss cost cutting measures.

g. Solar Energy Proposal Reviews

There has been a push for the nation to move more toward solar energy. The Bureau of Land Management (BLM) is one of the regulatory agencies that is feeling the affects of this push. The BLM has received over 40 applications for solar power plants in the State of Arizona. The applications combined cover approximately 800,000 acres of land. Most of the proposals are for concentrated (thermal) power plants. These types of plants can actually use more water than coal fired plants. Due to the number of applications and the potential for very high water use, the BLM Phoenix office has asked ADWR to assist them in developing hydrologic criteria for reviewing the applications.

The State of Arizona Land Department has also started receiving applications. As a result, it has been recognized that there needs to be a coordinated effort between many State agencies on proposed solar energy projects, along with BLM and possibly other Federal agencies that could be affected by the process. Ongoing meetings are planned.

h. ADWR Website Updates – The ADWR website is being revamped and updates should be on-line within the next couple of months.

i. Annual Water Withdrawal and Use Reports – Annual Report forms will be sent out within the next couple of weeks.

**7. Date and Agenda for Next Meeting**

The next meeting was tentatively scheduled for Thursday, March 12, 2009 at 9:30 a.m.

**8. Adjournment**

The meeting was adjourned at 11:40 a.m.